Methodological Literacy of Doctoral Students – an Emerging Model

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Agenda

- Concepts of information literacy
- Studies of relevance and information ecology
- Study of information practices of doctoral students
- Methodological literacy – a model
- Conclusions / recommendations
Objectives and contexts

• Determine methodological literacy as part of information literacy

• Contexts:
  • Information interactions: information behavior
  • Doctoral students: young experts – research, teaching, learning
  • Information literacy – as information practice
Sources of the concept of information literacy

- „Guided learning“ (Kuhlthau, Maniotes, Caspari)
- „Seven faces“ (Bruce)
- Digital literacy – „knowledge assembly“ (Bawden, Robinson)
- Contexts: doctoral students in education, research, workplaces
Information Literacy

- Information practices
- Values Evaluation of information
- Information use
- Understanding of information
- Research literacy
- Critical literacy
- Social-structural literacy
- Personal information management
- Construction of knowledge
Own empirical studies

Relevance study

• 2005-2007, 21 PhD. students
• Ecological information literacy: semantic, cognitive, social dimensions
• Relevance assessment, tools for filtering

Information ecology - study

• 2010-2011, 17 managers
• Enhance interest, motivation, tools
Study of information practices of doctoral students

- Which information interactions are crucial for research and study?
- Which information interactions compose the methodological literacy?
- Which knowledge is needed for methodological literacy?
Study of information practices of doctoral students

1. Identify needs, practices
2. Model interactions
3. Derive recommendations
The concept of the research

<table>
<thead>
<tr>
<th>Research behavior</th>
<th>selection of topic</th>
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<tr>
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<td>planning of the research process</td>
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<td>Information behavior in information use</td>
<td>information strategies, practices</td>
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<td>serendipitous information gathering</td>
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<td>Information gathering and seeking</td>
<td>types of sources</td>
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<td>information horizon</td>
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<td>Organization of information</td>
<td>sorting of sources</td>
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<td>sorting tools</td>
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<td>Social media</td>
<td>use</td>
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<td>benefits</td>
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<td>Information behavior in production</td>
<td>publishing</td>
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<td>types of sources; selection of journals, publisher, forms</td>
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Doctoral students in information environment
Data acquisition and analysis

- Qualitative study:
  - Semi-structured interviews
    - 18 doctoral students, selection of different disciplines (e.g. philosophy, social psychology, mathematics)
    - 10 men, 8 women, average age: 26.9
  - Subjects from 3 universities in Slovakia
  - Visualization of information horizons
- Analyses: content analysis, conceptual analysis
Results: information strategies

- Browsing keywords
- Google, Google scholar
- Digital libraries, electronic databases
- Blogs, wikis
- Social media, discussion groups
Results: information needs

- Curiosity
- Verification
- Problem solving
- Argumentation
- Elaboration
- Information sharing / social media
Feelings

positive
- Joy, happiness, relief, self-consciousness
- Finding information

negative
- Anger, frustration, disappointment
- Inaccessibility of information, barriers, lack of time
Academic community
Academic community

Supervisors
Foreign experts

Concept definitions
Relationships

Information literacy courses
Academic webpages
### Academic community

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<tr>
<th>navigation</th>
<th>communication</th>
<th>systems</th>
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<td>• Guide in contexts</td>
<td>• International mobility</td>
<td>• Disintegration</td>
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<td>• Information literacy trainings</td>
<td>• Assessment of publishing</td>
<td>• Information overload</td>
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Methodological knowledge

- Modes of study
- Knowledge production
- Statement of the problem
- Focus
- Concept mapping
- Terminology
- Data analyses
- Methods, tools
Proposals for help

Writing works
- Collaboration with colleagues
- Integration of systems

Citing
- Ethics
- E-learning
- Information literacy

Shared use
- Information sharing
- Use of digital sources
Community characteristics of information practices

- Common values: curiosity
- Collaboration, critical thinking
- Terminology: discovery of knowledge
- Research ethics: methodological tools
Common characteristics

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<tr>
<th>Content</th>
<th>Context</th>
<th>Social networks</th>
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| • Availability  
  • Visibility | • Methodology  
  • Disciplines  
  • Project  
  • Tasks  
  • Processes | • Experts  
  • Networking |
Differences in disciplines

- Interpretations, cognitive filtering
- Data analyses, modeling
- Laboratory experiments, modeling, design
- Experiments, modeling, development
Methodological literacy

- Knowledge and skills in problem statement, project management, analysis, synthesis, interpretation, methodological paradigms and methods
- Abilities to apply the knowledge in research projects and publishing

Principles:
- Values, community, tools, contexts
- Information interactions: orientation, navigation, knowledge organization, learning, social networking
Model of Methodological Literacy
Recommendations

- Support for methodological literacy in:
  - Advanced information seeking and use
  - Conceptual infrastructure, relevance
  - Visualization of knowledge in information sources
  - Interactive communication and collaboration
  - Writing theses, synthesis, interpretation, presentations
  - Publishing, building expert networks
Conclusions

- Multifaceted model:
- Need to cultivate information styles and methodological literacy
- Features: map into digital libraries, community portals
  - Value-added services:
    - E.g. collaborative searching, social networking
    - Consulting, peer-reviewing, technical writing
    - Methodological awareness
References

- Bruce, C. S.: Seven Faces of Information Literacy. AUSLIB Press, Adelaide, South Australia (1997)